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ABSTRACT

Several current television series for preschool children convey stories, not through meaningful dialogue, but through visual information and intonational cues embedded within nonsensical dialogue. This study examined young children's ability to construct meaning from such materials. Participating were 135 preschoolers, 3 to 5 years old. Subjects viewed two 5-minute television segments about a family of chickens; approximately one-half of the sample viewed the segments with all dialogue spoken in nonsensical "chicken-talk," and one-half viewed it with key English words and phrases inserted among the "chicken-talk" dialogue. In addition, one segment was expected to be easier to understand because the central educational message (concerning cooperation) was primarily visual, while the other (telling the truth) was primarily verbal. After viewing each segment, the children were interviewed to assess their comprehension of the overall storyline, as well as the central messages embedded within the segment. The findings indicated that comprehension was significantly stronger among the older children and (across the age range) for the more visual story about cooperation. However, contrary to expectations from past literature, comprehension was not significantly enhanced by the inclusion of English words and phrases. Thus, it appears that preschool children can use visual information and intonational cues to construct meaning from televised narratives. (Contains 15 references.) (Author/KB)

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Young children's comprehension of television:

The role of visual information and intonation

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Children's Television Workshop

Poster presented at the biennial meeting of the Society for Research in Child Development, Albuquerque, NM.

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Abstract

Several current television series for preschool children convey stories, not through meaningful dialogue, but through visual information and intonational cues embedded within nonsensical dialogue. To examine young children's ability to construct meaning from such material, 135 three-, four-, and five-year-olds children each viewed two five-minute television segments about a family of chickens; approximately 1/2 of the sample viewed the segments with all dialogue spoken in nonsensical "chicken-talk," and 1/2 viewed it with key English words and phrases inserted among the "chicken-talk" dialogue. In addition, one segment was expected to be easier to understand because the central educational message (concerning cooperation) was primarily visual, while the other (telling the truth) was primarily verbal. Results indicated that comprehension was significantly stronger among older children and (across the age range) for the more visual story about cooperation. However, contrary to expectations from past literature, comprehension was not significantly enhanced by the inclusion of English words and phrases. Thus, it appears that preschool children can use visual information and intonational cues to construct meaning from televised narratives.

The past few years have seen the introduction of several television series for preschool children in which stories are conveyed without the use of meaningful dialogue. These series (e.g., *Teletubbies* on PBS, the "Pingu" segments in the Cartoon Network's *Small World*) rely instead on visual information and intonational cues embedded within nonsensical dialogue to carry meaning.

From the standpoint of television producers, there is a significant economic incentive to producing such material. The absence of dialogue means that the material can be broadcast internationally without entailing the cost of dubbing in translations of the dialogue. Thus, as broadcast and cable television become increasingly global, it is likely that the trend toward this type of programming will continue.

From the standpoint of developmental researchers, the increasing presence of such series raises questions about children's comprehension of such material and provides a means for investigating, more generally, how children use visual and intonational cues to make meaning. On the most basic level, one would expect preschool children to have the skills and abilities necessary to understand this type of televised material. Research in the arena of language development has shown that even infants are sensitive to intonational cues in speech, and that even toddlers can use nonverbal gestures to represent objects that are not

physically present (e.g., Acredolo & Goodwin, 1988; Mehler, et al., 1988; Walker-Andrews & Grolnick, 1983).

What is not clear, however, is whether preschool children can use these kinds of information, in the absence of meaningful semantic information, to understand a televised story. Indeed, prior literature might suggest that young children would have difficulty understanding televised stories presented without meaningful dialogue. Collins and his colleagues have found that, prior to middle childhood, children have difficulty drawing inferences to aid in their comprehension of television (e.g., Collins, 1983), and there would, presumably, be a greater need for inferences in the absence of dialogue. Similarly, Anderson, Lorch, Field, and Sanders (1981) found that English-speaking preschoolers' attention to television was greater when visuals were accompanied by an English-language soundtrack than when the program was dubbed into Greek. Pezdek and Stevens (1984) found that kindergarten children's memory for both visual and auditory information from a television program was significantly reduced when the visual and auditory information were mismatched. Finally, van der Molen and van der Voort (1997, 1998) found that school-age children recalled televised news stories better than print versions, but the difference was greatest when the televised visuals were redundant with information presented verbally.

Yet, none of these studies employed television programs that were specifically designed to be understood without meaningful dialogue. Rather, past studies have employed material (e.g., segments from *Sesame Street*) that was produced with the intent that children would take meaning from both visual and verbal information. Thus, it is not surprising that comprehension of this material would be reduced when the verbal information is removed.

The present study examines preschool children's comprehension of televised material that is designed to be understood without meaningful dialogue. In particular, it compares comprehension of such material when dialogue consists only of a nonsense language (so that meaning can be constructed only from visual and intonational cues) to comprehension of the same material with key English words and phrases inserted among the nonsense dialogue.

Method

Sample

Participants in the study were 135 three- to five-year-old children (73 boys and 62 girls) from two preschools in Westchester County, NY. The sample included 28 three-year-olds, 60 four-year-olds, and 47 five-year-olds. Approximately 80% of the sample was White, 15% was Asian, 3% was Latino, and 2% was African-American.

Materials and Procedure

Each child viewed rough cuts of two "Koki" segments from the television series *Big Bag*. These five-minute, claymation segments feature a family of anthropomorphic chickens, and had been produced with the intent that they would be aired without meaningful dialogue. Two versions of each segment were created: (a) one in which visuals were accompanied by dialogue spoken in "chicken-talk," which provided intonational cues but no meaningful semantic information, and (b) one in which key English words and phrases were inserted into the characters' "chicken-talk" dialogue. Each child viewed either the "chicken-talk" or the English versions of two "Koki" segments.

In addition, the two segments that each child viewed were intended to comprise a range of difficulty for comprehension. One segment, "Happy

Birthday, Koki" (in which characters fight over, then share a toy), was expected to be easier to understand, because the central message of the segment (sharing and cooperation) was primarily visual in nature. The other segment, "Koki the Gardener" (in which one character lies, then confesses to ruining her mother's garden), was expected to be more difficult to understand without meaningful dialogue, because the central message (honesty) was primarily verbal in nature.

All viewing took place in same-age groups. After viewing each segment, children were interviewed to assess their comprehension of the overall storyline, as well as the central messages embedded within the segment.

Results

Data were coded to reflect comprehension of two keys aspects of the educational message in each segment: comprehension of the problem (i.e., that the characters fought over a toy in "Happy Birthday, Koki" and that Koki told a lie in "Koki the Gardener") and the solution (i.e., that the characters decided to share the toy in "Happy Birthday, Koki" and that Koki admitted the truth in "Koki the Gardener").

As expected, comprehension of the problem and solution in each segment was significantly stronger for the story about cooperation than for the story about honesty (Fig. 1; $F_{1, 268} = 74.37$, $p < .001$ for comprehension of the problem and $F_{1, 268} = 125.16$, $p < .001$ for the solution). Thus, comprehension of the central educational messages was stronger when those messages were primarily visual, rather than verbal, in nature.

Fig. 1 about here

Significant age differences were also observed, with comprehension of both segments increasing significantly with age (Fig. 2). This held true for comprehension of both the problem ($F_{2, 129} = 3.80$, $p < .05$, for the segment on cooperation and $F_{2, 129} = 13.23$, $p < .001$ for the segment on honesty) and

solution ($F_{2, 129} = 4.08$, $p < .05$ for the segment on cooperation and $F = 5.18$, $p < .01$ for the segment on honesty) in each segment.

Fig. 2 about here

However, as Figure 3 shows, children's comprehension was not aided significantly by the addition of key English words and phrases. Comprehension of the solutions in the two segments was not affected significantly by the inclusion of English among the "chicken-talk" dialogue ($F_{2, 129} = .49$, N.S., and .56, N.S.), nor was comprehension of the problem in the segment on honesty ($F_{1, 129} = 1.64$, N.S.). Indeed, the only significant difference that emerged was that comprehension of the problem in the segment on honesty was stronger among children who'd viewed the version <u>without</u> English words ($F_{1, 129} = 8.14$, $p = .005$); however, this appeared to be an artifact stemming from a greater number of five-year-olds in the "chicken-talk" condition than in the English condition.

Fig. 3 about here

Discussion

As these data demonsrate, the absence of meaningful dialogue did not seem to impede children's comprehension of televised segments. While comprehension certainly was not perfect in any condition (especially among younger children), no significant advantage was provided by the inclusion of English words among the nonsensical dialogue. In contrast to expectations stemming from past literature, then, these data suggest that young children can use visual and intonational information as aids in comprehension when the material has been designed to be understood without meaningful dialogue.

As might be expected, however, not all stories were equally easy for children to understand. In particular, children in all conditions (with and without English) showed significantly greater comprehension of a story in which the central educational message was primarily visual than of a story in which the message was primarily verbal. This is consistent with the more general finding, among older subjects, of a recall advantage for information presented visually or audiovisually, rather than merely verbally (e.g., Grimes, 1990, 1991; cf. Paivio, 1969, 1971), and with formative research on educational television that has shown comprehension and appeal to be stronger when material is presented concretely and visually (e.g., Fisch, Cohen, McCann, & Hoffman, 1993; *Sesame Street* Research, 1997).

Of course, this is not to say that verbal information is not important or should be disregarded for young children. As Rolandelli (1989) has argued, television uses both visual and auditory modalities to convey information, and children's reliance on one or the other may depend more upon which modality presents the more useful and comprehensible information at the moment than upon the more general nature of the modalities themselves. Indeed, the present data suggest that young children use various kinds of information to construct meaning from televised stories, just as they do in their face-to-face interactions with others in the real world.

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Figure 1.

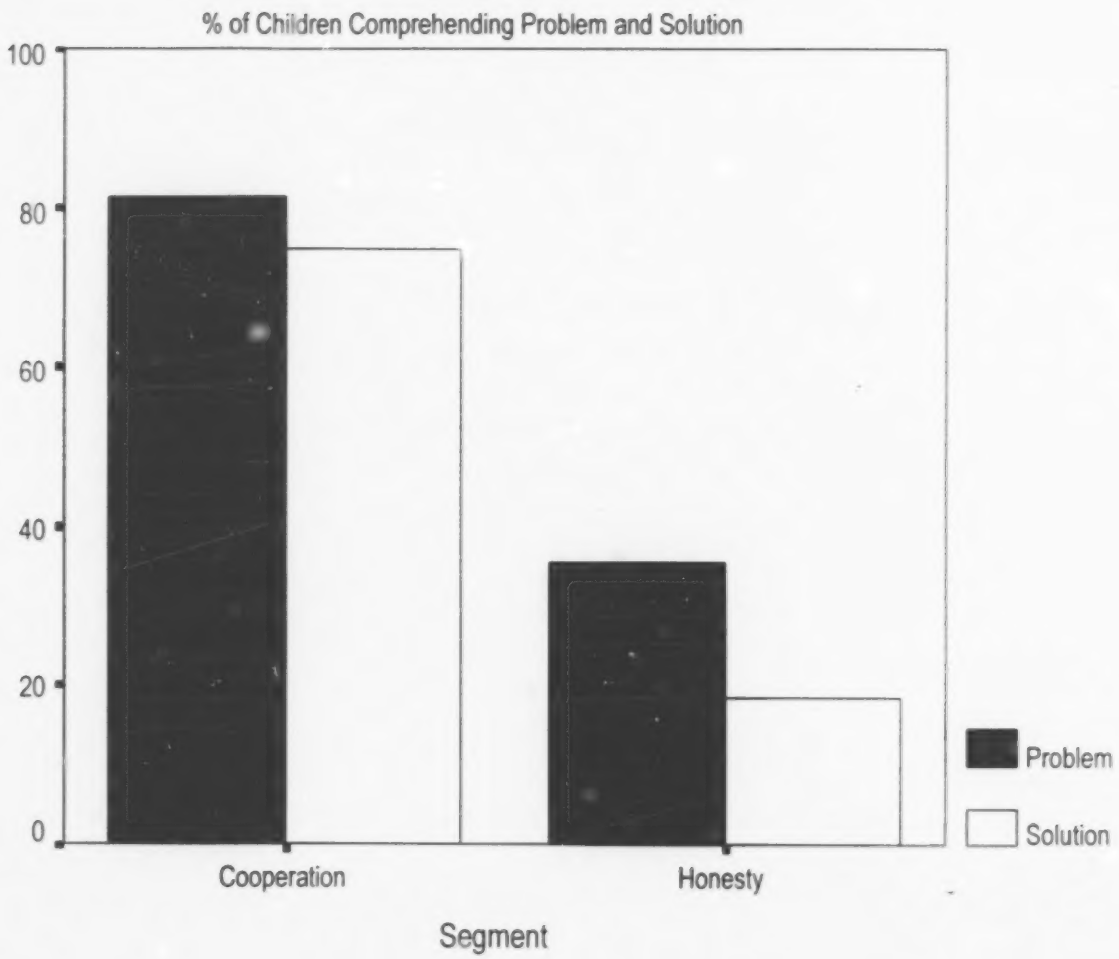
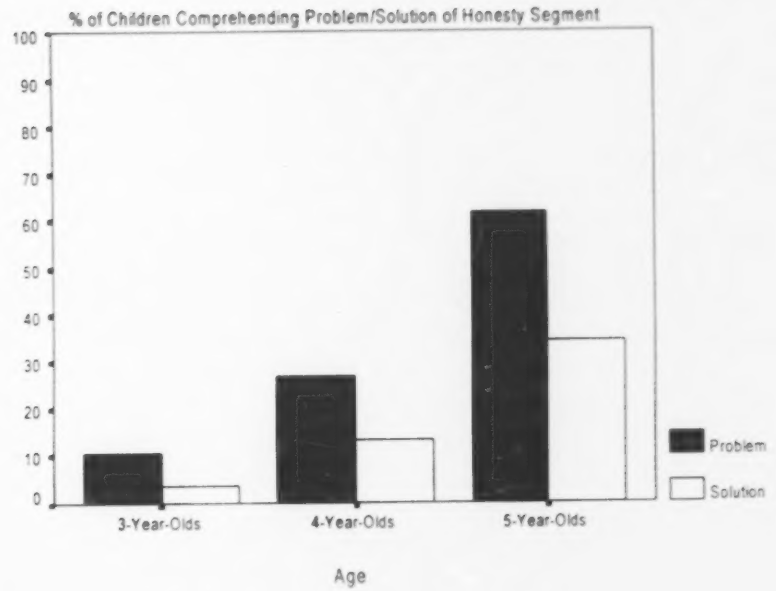

% of Children Comprehending Problem and Solution
100
80
60
40
20
0
Cooperation
Honesty
Segment
Problem
Solution

Figure 2.

Comprehension of Segment by Age



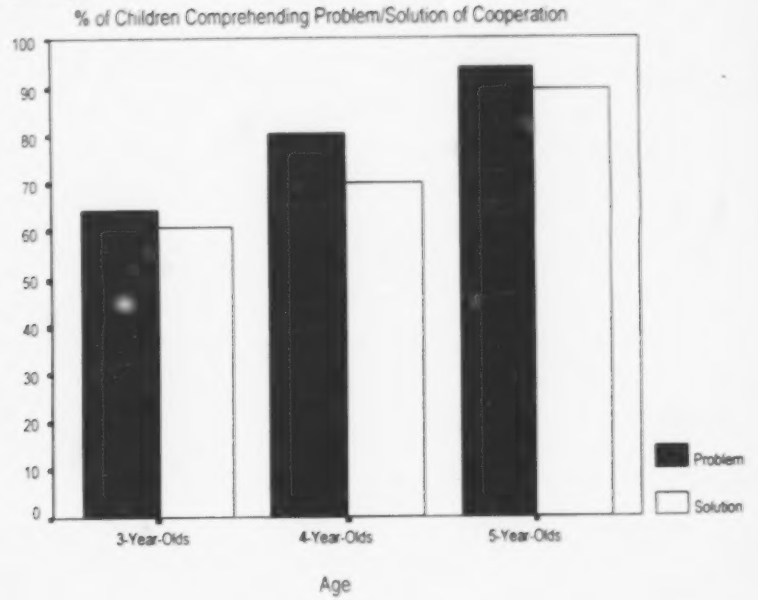


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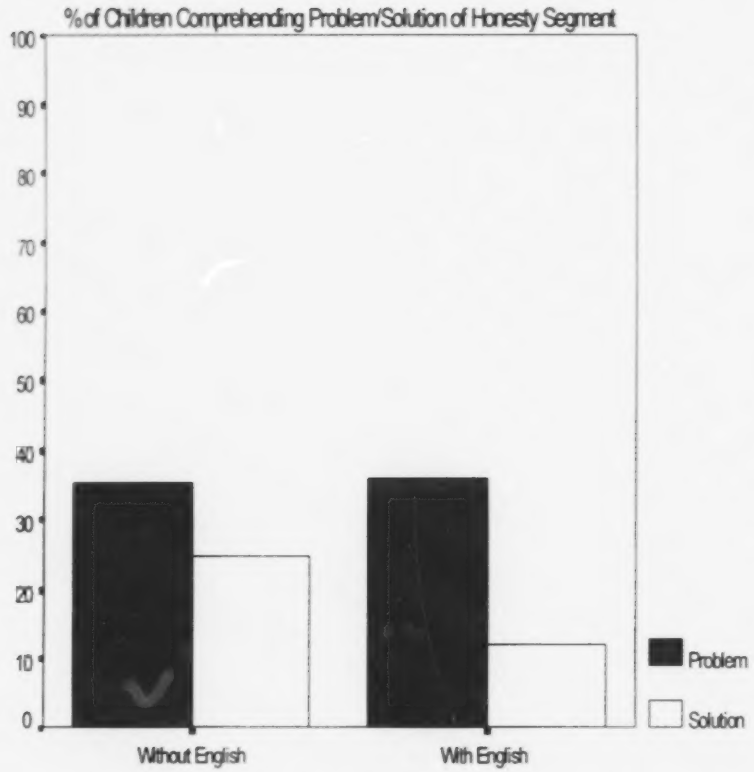
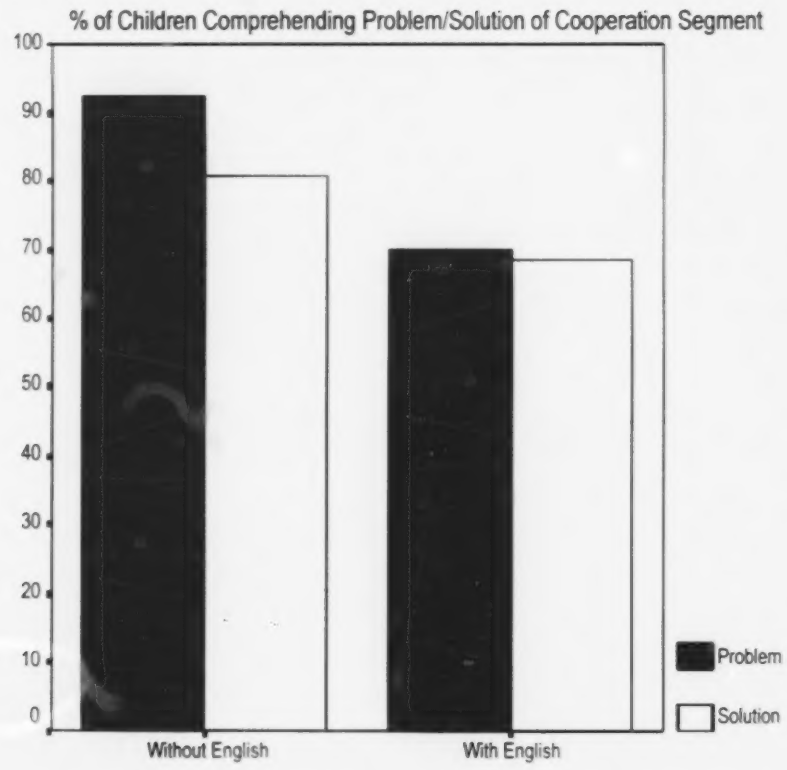
Figure 3.

Comprehension of Segments with and without English





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